

Freeform Search

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EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Database:

L3 and synchronization

Term:**Display:** 100 **Documents in Display Format:** FRO **Starting with Number** 1**Generate:** Hit List Hit Count Side by Side Image**Search** **Clear** **Interrupt**

Search History

DATE: Wednesday, September 26, 2007 [Purge Queries](#) [Printable Copy](#) [Create Case](#)

Set Name **Query**

side by side

DB=USPT; PLUR=YES; OP=OR

Hit Count **Set Name**

result set

<u>L4</u>	L3 and synchronization	8	<u>L4</u>
<u>L3</u>	L2 and API	19	<u>L3</u>
<u>L2</u>	L1 and (database neae engine)	161	<u>L2</u>
<u>L1</u>	storage near platform	938	<u>L1</u>

END OF SEARCH HISTORY

Hit List

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Search Results - Record(s) 1 through 8 of 8 returned.

1. Document ID: US 7272598 B2

L4: Entry 1 of 8

File: USPT

Sep 18, 2007

US-PAT-NO: 7272598

DOCUMENT-IDENTIFIER: US 7272598 B2

TITLE: Structured indexes on results of function applications over data

DATE-ISSUED: September 18, 2007

PRIOR-PUBLICATION:

DOC-ID	DATE
US 20050198019 A1	September 8, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cunningham; Conor J.	Redmond	WA		US
Hanson; Eric N.	Bellevue	WA		US
Joshi; Milind M.	Redmond	WA		US
Galindo-Legaria; Cesar A.	Redmond	WA		US
Waas; Florian M.	Seattle	WA		US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Microsoft Corporation	Redmond	WA		US	02

APPL-NO: 11/096149 [PALM]

DATE FILED: March 31, 2005

RELATED-US-APPL-DATA:

continuation parent-doc US 10795623 00 20040308 PENDING child-doc US 11096149

INT-CL-ISSUED:

TYPE	IPC	DATE	IPC-OLD
IPCP	G06F17/30	20060101	G06F017/30

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPP	G06 F 17/30	20060101

US-CL-ISSUED: 707/3; 707/2, 707/5
US-CL-CURRENT: 707/3; 707/2, 707/5

FIELD-OF-CLASSIFICATION-SEARCH: 707/3, 707/2, 707/5
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U. S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5991754</u>	November 1999	Raitto et al.	707/2
<u>6334128</u>	December 2001	Norcott et al.	707/5
<u>6356920</u>	March 2002	Vandersluis	715/501.1
<u>6477525</u>	November 2002	Bello et al.	707/3
<u>6493708</u>	December 2002	Ziauddin et al.	707/3
<u>6496819</u>	December 2002	Bello et al.	707/3
<u>6505189</u>	January 2003	On Au et al.	707/2
<u>6643636</u>	November 2003	Au et al.	707/2
<u>6708186</u>	March 2004	Claborn et al.	707/102
<u>6785673</u>	August 2004	Fernandez et al.	707/3
<u>6850933</u>	February 2005	Larson et al.	707/4
<u>6934712</u>	August 2005	Kiernan et al.	707/102
<u>7043499</u>	May 2006	Nelson et al.	707/102
<u>7120645</u>	October 2006	Manikutty et al.	707/102
<u>7127469</u>	October 2006	Lindblad et al.	707/102
<u>2001/0047372</u>	November 2001	Gorelik et al.	707/514
<u>2003/0154189</u>	August 2003	Egilsson et al.	707/1
<u>2004/0122804</u>	June 2004	Zhang et al.	707/3
<u>2005/0097084</u>	May 2005	Balmin et al.	707/3
<u>2005/0114307</u>	May 2005	Le et al.	707/3

ART-UNIT: 2163

PRIMARY-EXAMINER: Wong; Don

ASSISTANT-EXAMINER: Dang; Thanh-Ha

ATTY-AGENT-FIRM: Woodcock Washburn LLP

ABSTRACT:

Indexed views or materialized views are used as a secondary index on a base table with multi-valued attributes. This provides for using the index to search in the nested data. Moreover, indexing is provided on the result of an unnest operation. Indexing a view on the result of an unnesting operation provides the ability to index the contents of a nested collection. One such unnesting operation is "cross apply unnest". This provides additional options for a query execution plan, leading to a more optimized query. A back-join is provided from the indexed view to the base table to allow fields from the base table that are not present in the indexed

view to be included in a result of a query on the table which is processed using the indexed view as an access path. This provides a means of including columns in the query result that are not in the indexed view but are in the base table. The back-join is supported from a single-table indexed view to the base table via a unique clustering key which acts as a logical row locator. Thus, the system can back-join to the base table from an indexed view via the unique clustering key. These features allow the use of indexed views to index a table on the contents of multi-set or multi-valued attributes.

6 Claims, 12 Drawing figures

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Image](#) | [Text](#) | [Claims](#) | [KMM](#) | [Drawn D](#)

2. Document ID: US 7254574 B2

L4: Entry 2 of 8

File: USPT

Aug 7, 2007

US-PAT-NO: 7254574

DOCUMENT-IDENTIFIER: US 7254574 B2

TITLE: Structured indexes on results of function applications over data

DATE-ISSUED: August 7, 2007

PRIOR-PUBLICATION:

DOC-ID	DATE
US 20050198013 A1	September 8, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Cunningham; Conor J.	Redmond	WA		US
Hanson; Eric N.	Bellevue	WA		US
Joshi; Milind M.	Redmond	WA		US
Galindo-Legaria; Cesar A.	Redmond	WA		US
Waas; Florian M.	Seattle	WA		US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Microsoft Corporation	Redmond	WA		US	02

APPL-NO: 10/795623 [PALM]

DATE FILED: March 8, 2004

INT-CL-ISSUED:

TYPE	IPC	DATE	IPC-OLD
IPCP	G06F17/30	20060101	G06F017/30

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPP	G06 F 17/30	20060101

US-CL-ISSUED: 707/3; 707/2, 707/5
US-CL-CURRENT: 707/3; 707/2, 707/5

FIELD-OF-CLASSIFICATION-SEARCH: 707/2-4, 707/107, 707/5
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5991754</u>	November 1999	Raitto et al.	707/2
<u>6334128</u>	December 2001	Norcott et al.	707/5
<u>6356920</u>	March 2002	Vandersluis	715/501.1
<u>6477525</u>	November 2002	Bello et al.	707/3
<u>6493708</u>	December 2002	Ziauddin et al.	707/3
<u>6496819</u>	December 2002	Bello et al.	707/3
<u>6505189</u>	January 2003	On Au et al.	707/2
<u>6643636</u>	November 2003	Au et al.	707/2
<u>6708186</u>	March 2004	Claborn et al.	707/107
<u>6785673</u>	August 2004	Fernandez et al.	707/3
<u>6850933</u>	February 2005	Larson et al.	707/4
<u>6934712</u>	August 2005	Kiernan et al.	707/102
<u>7043499</u>	May 2006	Nelson et al.	707/102
<u>7120645</u>	October 2006	Manikutty et al.	707/102
<u>7127469</u>	October 2006	Lindblad et al.	707/102
<u>2001/0047372</u>	November 2001	Gorelik et al.	707/514
<u>2003/0154189</u>	August 2003	Egilsson et al.	707/1
<u>2004/0122804</u>	June 2004	Zhang et al.	707/3
<u>2005/0097084</u>	May 2005	Balmin et al.	707/3
<u>2005/0114307</u>	May 2005	Li et al.	707/3

OTHER PUBLICATIONS

Fegaras, Leonidas, "Optimizing Object Queries Using an Effective Calculus," ACM Transactions on Database Systems, vol. 25, No. 4, Dec. 2000, pp. 457-516. cited by other
Garzotto, Franca, et al., "Adding Multimedia Collections to the Dexter Model," ACM European Conference on Hypermedia Technology, Sep. 1994, pp. 70-80. cited by other
Oracle 9i SQL Reference, Release 2 (9.2), Mar. 2002, pp. 13-89 to 13-90. cited by other
Orenstein, Jack, et al. "Query Processing in the ObjectStore Database System," ACM SIGMOD International Conference on Management of Data, vol. 21, Issue 2, Jun. 1992, pp. 403-412. cited by other
Stonebraker, Michael, "The Case For Partial Indexes," SIGMOD, Dec. 1989, Record 18, No. 4, 11 pages. cited by other

ART-UNIT: 2163

PRIMARY-EXAMINER: Wong; Don

ASSISTANT-EXAMINER: Dang; Thanh-Ha

ATTY-AGENT-FIRM: Woodcock Washburn LLP

ABSTRACT:

Indexed views or materialized views are used as a secondary index on a base table with multi-valued attributes. This provides for using the index to search in the nested data. Moreover, indexing is provided on the result of an unnest operation. Indexing a view on the result of an unnesting operation provides the ability to index the contents of a nested collection. One such unnesting operation is "cross apply unnest". This provides additional options for a query execution plan, leading to a more optimized query. A back-join is provided from the indexed view to the base table to allow fields from the base table that are not present in the indexed view to be included in a result of a query on the table which is processed using the indexed view as an access path. This provides a means of including columns in the query result that are not in the indexed view but are in the base table. The back-join is supported from a single-table indexed view to the base table via a unique clustering key which acts as a logical row locator. Thus, the system can back-join to the base table from an indexed view via the unique clustering key. These features allow the use of indexed views to index a table on the contents of multi-set or multi-valued attributes.

9 Claims, 12 Drawing figures

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Document List](#) | [Claims](#) | [KIMC](#) | [Drawn D.](#)

Γ 3. Document ID: US 7243103 B2

L4: Entry 3 of 8

File: USPT

Jul 10, 2007

US-PAT-NO: 7243103

DOCUMENT-IDENTIFIER: US 7243103 B2

TITLE: Peer to peer enterprise storage system with lexical recovery sub-system

DATE-ISSUED: July 10, 2007

PRIOR-PUBLICATION:

DOC-ID	DATE
US 20030154238 A1	August 14, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Murphy; Michael J.	Salem	NH		US
O'Neill; Donal	Somerville	MA		US
Zukovsky; Eli	Charlestown	MA		US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
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The Escher Group, Ltd. Cambridge MA US 02
 APPL-NO: 10/217021 [PALM]
 DATE FILED: August 12, 2002

RELATED-US-APPL-DATA:
 continuation-in-part parent-doc US 10075710 00 20020214 US 7069295 A child-doc US 10217021

INT-CL-ISSUED:

TYPE	IPC	DATE	IPC-OLD
IPCP	G06F17/30	20060101	G06F017/30

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPP	G06 F 17/30	20060101

US-CL-ISSUED: 707/10, 707/100, 707/202, 707/203, 707/8, 707/9
 US-CL-CURRENT: 707/10, 707/100, 707/202, 707/203, 707/8, 707/9

FIELD-OF-CLASSIFICATION-SEARCH: 707/10, 707/9, 707/8, 707/202, 707/203, 707/200, 709/203, 709/220, 709/226

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5475834</u>	December 1995	Anglin et al.	707/203
<u>5673382</u>	September 1997	Cannon et al.	714/6
<u>5806065</u>	September 1998	Lomet	707/8
<u>5832514</u>	November 1998	Norin et al.	707/202
<u>5911776</u>	June 1999	Guck	
<u>5913207</u>	June 1999	Chaudhuri et al.	
<u>5918229</u>	June 1999	Davis et al.	
<u>5978791</u>	November 1999	Farber et al.	707/2
<u>6065017</u>	May 2000	Barker	707/202
<u>6065018</u>	May 2000	Beier et al.	707/202
<u>6374266</u>	April 2002	Shnelvar	707/204
<u>6408310</u>	June 2002	Hart	707/201
<u>6430577</u>	August 2002	Hart	707/201
<u>2002/0055989</u>	May 2002	Stringer-Calvert et al.	

OTHER PUBLICATIONS

Stephen Simon, "Peer-to-Peer Network Management In An IBM SNA Network", IEEE Network Magazine, pp. 30-34, 1991. cited by other
 Antony Rowstron et al., "Storage Management and Cachine in PAST, A large-Scale Persistent Peer-to-Peer Storage Utility", ACM Digital Library, pp. 188-201, 2001.

cited by other

Jussie Kangasharju et al., "A Replicated Architecture for the Domain Name System", IEEE Transactions, INFOCOM 2000, pp. 660-669. cited by other

ART-UNIT: 2168

PRIMARY-EXAMINER: Robinson; Greta

ATTY-AGENT-FIRM: Cesari and McKenna, LLP

ABSTRACT:

A peer-to-peer storage system includes a storage coordinator that centrally manages distributed storage resources in accordance with system policies administered through a central administrative console and a lexical recovery sub-system that automatically creates versions of files that are thereafter maintained by the system. The storage resources, or "nodes," are otherwise unused portions of storage media, e.g., hard disks, that are included in the devices such as personal computers, workstations, laptops, file servers, and so forth, that are connected to a corporate computer network, and are thus otherwise available only individually to the respective devices. The storage coordinator assigns the nodes to various "replication groups" and allocates the storage resources on each of the nodes in a given group to maintaining dynamically replicated current and previous versions of the group files. The storage nodes in a given group perform dynamic file replication and synchronization operations by communicating directly, that is, peer-to-peer, using a message-based protocol. The storage coordinator also manages distributed searches of file content on the network by selecting one node from each group to search through the associated group files. The selected nodes report the search results back to the storage coordinator, which organizes the results and provides them to the user. The user may then restore or recover a previous version of a file or review a current version of the file by selecting the desired file version from the search results.

9 Claims, 13 Drawing figures

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Description](#) | [Claims](#) | [KIMC](#) | [Drawn D](#)

4. Document ID: US 7237045 B2

L4: Entry 4 of 8

File: USPT

Jun 26, 2007

US-PAT-NO: 7237045

DOCUMENT-IDENTIFIER: US 7237045 B2

TITLE: Apparatus and method for storage processing through scalable port processors

DATE-ISSUED: June 26, 2007

PRIOR-PUBLICATION:

DOC-ID

DATE

US 20040143638 A1

July 22, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Beckmann; Curt E.	Los Gatos	CA		US
McClanahan; Edward D.	Pleasanton	CA		US
Pangal; Guruaj	Pleasanton	CA		US

ASSIGNEE- INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
Brocade Communications Systems, Inc.	San Jose	CA		US	02	

APPL-NO: 10/695407 [PALM]
 DATE FILED: October 28, 2003

RELATED-US-APPL-DATA:

continuation-in-part parent-doc US 10610304 00 20030630 PENDING child-doc US 10695407
 us-provisional-application US 60393017 00 20020628
 us-provisional-application US 60392816 00 20020628
 us-provisional-application US 60392873 00 20020628
 us-provisional-application US 60392398 00 20020628
 us-provisional-application US 60392410 00 20020628
 us-provisional-application US 60393000 00 20020628
 us-provisional-application US 60392454 00 20020628
 us-provisional-application US 60392408 00 20020628
 us-provisional-application US 60393046 00 20020628

INT-CL-ISSUED:

TYPE	IPC	DATE	IPC-OLD
IPCP	G06F3/00	20060101	G06F003/00
IPCS	G06F15/00	20060101	G06F015/00
IPCN	G06F12/00	20060101	G06F012/00
IPCN	G06F13/00	20060101	G06F013/00

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPN	<u>G06 F 12/00</u>	20060101
CIPN	<u>G06 F 13/00</u>	20060101
CIPS	<u>G06 F 15/00</u>	20060101
CIPP	<u>G06 F 3/00</u>	20060101

US-CL-ISSUED: 710/38; 710/74, 711/100, 712/10
 US-CL-CURRENT: 710/38; 710/74, 711/100, 712/10

FIELD-OF-CLASSIFICATION-SEARCH: 710/74, 711/100, 712/10
 See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
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<u>6971044</u>	November 2005	Geng et al.	714/11
<u>2002/0159468</u>	October 2002	Foster et al.	
<u>2003/0074388</u>	April 2003	Pham et al.	709/106
<u>2003/0074473</u>	April 2003	Pham et al.	
<u>2003/0131182</u>	July 2003	Kumar et al.	711/5
<u>2003/0172149</u>	September 2003	Edsall et al.	
<u>2003/0202520</u>	October 2003	Witkowski et al.	370/400
<u>2003/0202536</u>	October 2003	Foster et al.	370/469
<u>2004/0117438</u>	June 2004	Considine et al.	709/203

OTHER PUBLICATIONS

J.R. Allen, Jr et al; "IBM PowerNP network processor: Hardware, software, and applications;" IBM J. Res. & Dev. vol. 47 No. 2/3 Mar./May 2003. cited by other

ART-UNIT: 2182

PRIMARY-EXAMINER: Huynh; Kim

ASSISTANT-EXAMINER: Sun; Scott

ATTY-AGENT-FIRM: Wong, Cabello, Lutsch, Rutherford, & Brucculeri, LLP

ABSTRACT:

A system including a storage processing device with an input/output module. The input/output module has port processors to receive and transmit network traffic. The input/output module also has a switch connecting the port processors. Each port processor categorizes the network traffic as fast path network traffic or control path network traffic. The switch routes fast path network traffic from an ingress port processor to a specified egress port processor. The storage processing device also includes a control module to process the control path network traffic received from the ingress port processor. The control module routes processed control path network traffic to the switch for routing to a defined egress port processor. The control module is connected to the input/output module. The input/output module and the control module are configured to interactively support data virtualization, data migration, data journaling, and snapshotting. The distributed control and fast path processors achieve scaling of storage network software. The storage processors provide line-speed processing of storage data using a rich set of storage-optimized hardware acceleration engines. The multi-protocol switching fabric provides a low-latency, protocol-neutral interconnect that integrally links all components with any-to-any non-blocking throughput.

36 Claims, 32 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference				Claims	KMPC	Drawn D
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Γ 5. Document ID: US 7143420 B2

L4: Entry 5 of 8

File: USPT

Nov 28, 2006

US-PAT-NO: 7143420

DOCUMENT-IDENTIFIER: US 7143420 B2

TITLE: Strategic technology architecture roadmap

DATE-ISSUED: November 28, 2006

PRIOR-PUBLICATION:

DOC-ID	DATE
US 20040045014 A1	March 4, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Radhakrishnan; Rakesh	Ashburn	VA		US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Sun Microsystems, Inc.	Santa Clara	CA		US	02

APPL-NO: 10/230591 [PALM]

DATE FILED: August 29, 2002

INT-CL-ISSUED:

TYPE	IPC	DATE	IPC-OLD
IPCP	G06F9/44	20060101	G06F009/44

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPP	<u>G06 F 9/44</u>	20060101

US-CL-ISSUED: 719/328; 717/104, 709/203, 709/223

US-CL-CURRENT: 719/328; 709/203, 709/223, 717/104

FIELD-OF-CLASSIFICATION-SEARCH: 719/310, 719/313-316, 719/320, 719/328, 717/100-104, 709/203, 709/223

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>6085238</u>	July 2000	Yuasa et al.	709/223
<u>6134594</u>	October 2000	Helland et al.	709/229
<u>6377993</u>	April 2002	Brandt et al.	709/227
<u>6424991</u>	July 2002	Gish	709/203
<u>6690783</u>	February 2004	Creamer et al.	379/201.12
<u>6968535</u>	November 2005	Stelting et al.	717/104
<u>2002/0103889</u>	August 2002	Markson et al.	709/223
<u>2003/0009606</u>	January 2003	Muthukannan	709/328

2003/0172145

September 2003

Nguyen

709/223

OTHER PUBLICATIONS

Guthrie, Cathy and Data Center and High Performance Group, The Benefits of Consolidation, Sun Journal, Industry Trends, Sep. 4, 2002, pp. 1-5. cited by other
Dr. James B. Baty, Towards a Services-Oriented Architecture, Sun Journal, Sep. 4, 2002, pp. 1-3. cited by other

ART-UNIT: 2194

PRIMARY-EXAMINER: Thomson; William

ASSISTANT-EXAMINER: Nguyen; Van

ATTY-AGENT-FIRM: Lembke; Kent A. Kubida; William J. Hogan & Hartson LLP

ABSTRACT:

The preferred embodiments relate to a system and method for creating an end-to-end e-business system for an enterprise. In some embodiments, a strategic architecture roadmap includes: a) an upper infrastructure layer having a service-driven architecture, with a virtual application layer having a distributed component architecture, and with a an application infrastructure layer having an n-tiered architecture; and b) a lower infrastructure layer having a network-centric architecture, with a compute server infrastructure layer having an adaptive compute architecture, and with a data storage infrastructure layer having a storage network architecture.

30 Claims, 14 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference	Section 1115	Section 1116	Claims	KWIC	Drawn D
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6. Document ID: US 7089293 B2

L4: Entry 6 of 8

File: USPT

Aug 8, 2006

US-PAT-NO: 7089293

DOCUMENT-IDENTIFIER: US 7089293 B2

TITLE: Switching system method for discovering and accessing SCSI devices in response to query

DATE-ISSUED: August 8, 2006

PRIOR-PUBLICATION:

DOC-ID	DATE
US 20040044744 A1	March 4, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Grosner, George	Westboro	MA		US

Wood; Douglas . Westford MA US

ASSIGNEE - INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Sun Microsystems, Inc.	Santa Clara	CA		US	02

APPL-NO: 10/415314 [PALM]
DATE FILED: November 2, 2001

RELATED-US-APPL-DATA:

us-provisional-application US 60245295 00 20001102
us-provisional-application US 60301378 00 20010627

PCT-DATA:

APPL-NO	DATE-FILED	PUB-NO	PUB-DATE	371-DATE
PCT/US01/45771	November 2, 2001	WO02/46866	Jun 13, 2002	Sep 3, 2003

INT-CL-ISSUED:

TYPE	IPC	DATE	IPC-OLD
IPCP	G06F15/16	20060101	G06F015/16
IPCS	G06F12/00	20060101	G06F012/00

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPS	<u>G06</u> F <u>12/00</u>	20060101
CIPP	<u>G06</u> F <u>15/16</u>	20060101

US-CL-ISSUED: 709/217; 710/1, 710/56, 710/74, 709/213, 709/216, 709/219, 709/203, 370/364, 370/466

US-CL-CURRENT: 709/217; 370/364; 370/466, 709/203, 709/213, 709/216, 709/219,
710/1, 710/56, 710/74

FIELD-OF-CLASSIFICATION-SEARCH: 710/1, 710/56, 710/74, 709/203, 709/213, 709/216, 709/219, 709/217, 370/466, 370/364

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U. S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5249292</u>	September 1993	Chiappa	395/650
<u>5598410</u>	January 1997	Stone	370/469
<u>5781910</u>	July 1998	Gostanian	707/201
<u>5881229</u>	March 1999	Singh	395/200.33
<u>5887146</u>	March 1999	Baxter	395/284
<u>5938776</u>	August 1999	Sicola	714/25
<u>5941972</u>	August 1999	Hoese	710/129
<u>6032190</u>	February 2000	Bremer	709/238

<u>6041381</u>	March 2000	Hoese	710/129
<u>6247060</u>	June 2001	Boucher	709/238
<u>6256740</u>	July 2001	Muller	713/201
<u>6393466</u>	May 2002	Hickman	709/214
<u>6904053</u>	June 2005	Berman	370/466

OTHER PUBLICATIONS

International Search Report mailed Jul. 23, 2002 in corresponding application PCT/US01/45780. cited by other
International Search Report mailed Jun. 7, 2002 in corresponding application PCT/US01/46272. cited by other
International Search Report published Feb. 6, 2003 in corresponding application PCT/US01/45772. cited by other
International Search Report published Feb. 6, 2003 in corresponding application PCT/US01/45771. cited by other
International Search Report mailed Apr. 12, 2002 in corresponding application PCT/US01/45637. cited by other

ART-UNIT: 2182

PRIMARY-EXAMINER: Peyton; Tammara

ATTY-AGENT-FIRM: Finnegan, Henderson, Farabow, Garrett & Dunner

ABSTRACT:

Disclosed are improved methods, devices and systems for storage management in digital networks.

14 Claims, 48 Drawing figures

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequencies](#) | [Attachments](#) | [Claims](#) | [KIMC](#) | [Drawn D](#)

7. Document ID: US 6985956 B2

L4: Entry 7 of 8

File: USPT

Jan 10, 2006

US-PAT-NO: 6985956

DOCUMENT-IDENTIFIER: US 6985956 B2

** See image for Certificate of Correction **

TITLE: Switching system

DATE-ISSUED: January 10, 2006

PRIOR-PUBLICATION:

DOC-ID
US 20040133634 A1

DATE
July 8, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Luke; Stanley	Stow	MA		US
Hall; Howard	Groton	MA		US
Cochrane; Christopher	Windham	NH		US
Ferrari; Stephen	Boston	MA		US
Condylis; Mitchell	New Boston	NH		US
Merhar; Milan	Brookline	MA		US

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Sun Microsystems, Inc.	Santa Clara	CA		US	02

APPL-NO: 10/415327 [PALM]
 DATE FILED: November 2, 2001

RELATED-US-APPL-DATA:

us-provisional-application US 60301378 00 20010627
 us-provisional-application US 60245295 00 20001102

PCT-DATA:

APPL-NO	DATE-FILED	PUB-NO	PUB-DATE	371-DATE
PCT/US01/45780	November 2, 2001	W002/069166	Sep 6, 2002	Sep 3, 2003

INT-CL-ISSUED:

TYPE	IPC	DATE	IPC-OLD
IPCP	G06F15/16	20060101	G06F015/16

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPP	<u>G06 F 15/16</u>	20060101

US-CL-ISSUED: 709/229; 709/216, 709/217, 709/219, 709/223, 709/226, 710/31, 710/316

US-CL-CURRENT: 709/229; 709/216, 709/217, 709/219, 709/223, 709/226, 710/31,
710/316

FIELD-OF-CLASSIFICATION-SEARCH: 709/216, 709/217, 709/219, 709/223, 709/226,
 709/229, 709/238, 709/203, 709/212, 710/31, 710/316, 710/308
 See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5249292</u>	September 1993	Chiappa	395/650
<u>5598410</u>	January 1997	Stone	370/469
<u>5781910</u>	July 1998	Gostanian	707/201
<u>5881229</u>	March 1999	Singh	395/200.33

<u>5887146</u>	March 1999	Baxter	395/284
<u>5938776</u>	August 1999	Sicola	714/25
<u>5941972</u>	August 1999	Hoese et al.	710/315
<u>6032190</u>	February 2000	Bremer et al.	709/238
<u>6041381</u>	March 2000	Hoese	710/315
<u>6247060</u>	June 2001	Boucher et al.	709/238
<u>6256740</u>	July 2001	Muller et al.	713/201
<u>6393466</u>	May 2002	Hickman et al.	709/214

OTHER PUBLICATIONS

International Search Report mailed Jul. 23, 2002 in corresponding application PCT/US01/45780. cited by other
International Search Report mailed Jun. 7, 2002 in corresponding application PCT/US01/46272. cited by other
International Search Report published Feb. 6, 2003 in corresponding application PCT/US01/45772. cited by other
International Search Report published Feb. 6, 2003 in corresponding application PCT/US01/45771. cited by other
International Search Report mailed Apr. 12, 2002 in corresponding application PCT/US01/45637. cited by other

ART-UNIT: 2151

PRIMARY-EXAMINER: Jean; Frantz B.

ATTY-AGENT-FIRM: Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.

ABSTRACT:

Methods and systems consistent with certain aspects related to the present invention provide a digital network having a plurality of data storage elements, at least one client, and a switch element. The switch element may be operable to receive access requests from the client and provide access to data on the storage elements in response to one or more access requests.

23 Claims, 46 Drawing figures

[Full](#) [Title](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequence](#) [Attachments](#) [Claims](#) [KMC](#) [Draw. D.](#)

8. Document ID: US 6779093 B1

L4: Entry 8 of 8

File: USPT

Aug 17, 2004

US-PAT-NO: 6779093

DOCUMENT-IDENTIFIER: US 6779093 B1

TITLE: Control facility for processing in-band control messages during data replication

DATE-ISSUED: August 17, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gupta; Vikas K.	Santa Clara	CA		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
VERITAS Operating Corporation	Mountain View	CA			02	

APPL-NO: 10/077330 [PALM]
DATE FILED: February 15, 2002

INT-CL-ISSUED: [07] G06F 12/06

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPP	<u>G06 F 12/06</u>	20060101

US-CL-ISSUED: 711/162; 711/135, 711/143, 711/147, 711/165, 709/202, 709/204, 709/207, 709/223, 709/225, 709/226, 709/229, 710/5, 710/21, 710/33, 710/46, 714/5, 714/6

US-CL-CURRENT: 711/162; 707/E17.005, 709/202, 709/204, 709/207, 709/223, 709/225, 709/226, 709/229, 710/21, 710/33, 710/46, 710/5, 711/135, 711/143, 711/147, 711/165, 714/5, 714/6

FIELD-OF-CLASSIFICATION-SEARCH: 707/204, 711/162, 711/161, 711/135, 711/143, 711/147, 714/5, 714/6, 709/202, 709/204, 709/207, 709/223, 709/225-226, 709/229-230, 710/5, 710/21, 710/33, 710/46

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5155845</u>	October 1992	Beal et al.	714/6
<u>5440727</u>	August 1995	Bhide et al.	711/117
<u>5737601</u>	April 1998	Jain et al.	707/201
<u>5974563</u>	October 1999	Beeler, Jr.	714/5
<u>2002/0029281</u>	March 2002	Zeidner et al.	709/230
<u>2003/0041074</u>	February 2003	Vasudevan et al.	707/204
<u>2003/0217119</u>	November 2003	Raman et al.	709/219

ART-UNIT: 2187

PRIMARY-EXAMINER: Sparks; Donald

ASSISTANT-EXAMINER: Farrokh; Hashem

ATTY-AGENT-FIRM: Campbell Stephenson Ascolese LLP Rifai; D'Ann Naylor

ABSTRACT:

A control facility that allows a non-programmer to use and manipulate replicated data without disrupting replication of the data itself. The control facility can be used and customized for a variety of software applications and storage platforms to perform off-host processing of the replicated data.

In response to a single user command during replication of data from a primary node to a secondary node, a control message is obtained from the primary node and a control command associated with the control message is automatically executed on the secondary node. A portion of the data is diverted from first storage at the secondary node to second storage in response to obtaining the control message, the portion of the data is copied to the first storage in response to completing the execution of the control command, and the data is automatically re-directed to the first storage in response to completing the copying.

8 Claims, 6 Drawing figures

Term	Documents
SYNCHRONIZATION	131859
SYNCHRONISATION	5045
SYNCHRONISATIONS	29
SYNCHRONIZATIONS	902
(3 AND SYNCHRONIZATION) .USPT.	8
(L3 AND SYNCHRONIZATION) .USPT.	8

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